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K. Panel



Attorney Docket No. 47,958-CPA (71117)

THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANT: Katsuya Nakagawa

EXAMINER: Nguyen, J.

SERIAL NO.: 09/006,363

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FOR: VIRTUAL KEYBOARD

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Technology Center 2600

Assistant Commissioner for Patents
Washington, D.C. 20231

CERTIFICATE OF MAILING

I hereby certify that this paper (along with any paper referred to as being attached or enclosed) is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to the Commissioner of Patents and Trademarks, Washington, D.C. 20231 on November 21, 1999.

By:

William J. Daley, Jr.
William J. Daley, Jr.

DECLARATION UNDER RULE 132

Sir:

I, Katsuya Nakagawa, declare as follows:

1. I am the sole inventor of the subject matter described and claimed in the patent application U.S.S.N. 09/006,363, filed on January 13, 1998 and otherwise identified above.

2. This declaration is being submitted to address certain incorrect conclusions reached by the Examiner as to the teachings and disclosure of the principal reference cited by the Examiner [Ouellette et al., USP 5,581,243, "Ouellette"] as well as to correctly describe the operation and limitations of a transparent pressure sensitive panel as included in the claims of the present invention.

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3. Before discussing the references, it is first necessary to understand the operations and limitations of a transparent pressure sensitive panel as described in the present invention and as is known to those skilled in the art.

4. There is shown in annotated FIG. 1 (see Appendix, Tab A) a structure of a pressure sensitive panel that includes several hundreds to several thousands of fine wires 10 that are arranged along the x-axis and y-axis respectively. The panel also includes two (2) pair of electrodes 11; one pair of electrodes is connected to the fine wires 10 extending in the x- direction and the other pair of electrodes is connected to the fine wires 10 that extend in the y-direction.

5. As described in the subject application on page 5 thereof, when pressures is applied to single area or point 20 of a pressure sensitive panel, two resistance wires, one in the x-direction and one in the y-direction contact each other and conduct at this point 20, as more clearly shown in FIG. 2A (see Appendix, Tab B).

6. As shown in annotated FIG. 2A, a voltage is applied across the terminal electrode pair 11 for the wire extending in the x-direction and a first output is obtained across the terminal electrode pair for the wire that extends in the y-direction. This first output value, corresponding to a divided resistance, is amplified to determine a position of the point along the x-axis or in the x-axis direction. Similarly, and as shown in annotated FIG. 2B (see Appendix, Tab B), a voltage is applied across the terminal electrode pair 11 for the wire extending in the y-direction and a second output is obtained across the terminal electrode pair for the wire that extends in the x-direction. This second output value, also corresponding to a divided resistance, is amplified to determine a position of the point along the y-axis or in the y-axis direction. In sum, the foregoing describes a process by which the x, y coordinates are determined for a position on the pressure-sensitive panel at which pressure is being applied. Stated another way, the foregoing describes a process by which the x, y coordinates for determining where the pressure-sensitive panel is being touched.

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7. Because all of the wires extending in the x-direction are all electrically connected to the one terminal electrode pair and because all of the wires extending in the y-direction are all electrically connected to another terminal electrode pair, if pressure is applied to more than one point on the pressure sensitive panel, for example two points, one **cannot** determine the x, y coordinate corresponding to each point where pressure is being applied. This is so because in a pressure-sensitive panel the output is across the *terminal electrode pair* **not** across the *individual wires* connected to the electrode terminal pair.

8. Thus, when pressure is applied to more than one point on the pressure-sensitive panel at the same time, only one output is provided for the x-direction and only another output is provided for the y-direction. There cannot be outputted an x, y coordinate output that corresponds to one area where pressure is being applied and a second x, y coordinate output that corresponds to one area where pressure is being applied. This is precluded by the electrical arrangement of the pressure-sensitive panel as illustrated in FIG. 3 of the subject application (see Appendix Tab C). This also is consistent with Dunthorn that teaches and discloses that some point other than the areas being pushed is determined.

9. In contrast, for a conventional keyboard, each key is uniquely identifiable because an output unique to each key is outputted when the key is depressed or otherwise actuated.

10. In a conventional keyboard, the shift key is utilized to alternate between the lower case and the upper case functionalities. Thus to print out a capital A, a typist or user depresses the shift key and while the shift key remains depressed the "A" letter key also is depressed. Similarly, if one wants to type an exclamation point ("!"), the typist depresses the shift key and while the shift key remains depressed the "1" number key also is depressed. After either the capital A or the exclamation point is

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printed, depicted on the screen or typed on the paper, the typist releases the letter/ number key and the shift key assuming that no more capital letters for example are to be typed.

10. As indicated above in paragraphs 7-8, it is **not** possible to separately determine the locations of each point where pressure is being applied on a pressure-sensitive panel if this pressure is being applied to more than one area at the same time. Thus and as described in the subject application, when using a pressure sensitive panel a typist **cannot** use or follow the procedure one would use with a conventional keyboard. Instead, another procedure has been developed for use with conventional pressure-sensitive panels such as of the type shown in FIG. 1 of the subject application.

11. In this other procedure, the typist first applies pressure to the area of the panel corresponding to the location of the shift key so as to change the input mode to the capitalization input mode. The typist then releases the shift key and then applies pressure to the area of the panel corresponding to the location of the desired capital letter/ punctuation mark key to be stricken. After the desired capital letter/ punctuation mark is outputted, the typist then stops applying pressure to the area of the capital letter/ punctuation mark key. Assuming that the capitalization input mode is no longer required, the typist again applies pressure to the area of the panel corresponding to the location of the shift key so as to release the capitalization input mode.

12. Because only one area of the pressure-sensitive panel is being pressed at a time in this technique, the x, y coordinates corresponding to the area being touched or pushed can be determined in the fashion described above and as described the subject application (e.g., see FIGS. 2A,B thereof).

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13. It should be recognized that the foregoing is essentially the same procedure described in the principal reference cited in connection with the prosecution of the Ouellette patent, namely Auer at al. [USP 4,725,694, "Auer"] a copy of which is provided in Appendix Tab D. See for example, FIG. 7 of Auer and the discussion at col. 5, lines 1-20. See also Dunthorn [USP 4,914,624], col. 1, lines 10-55.

14. There is described in column 5, lines 4-32 of Ouellette a process for determining a *touch* on the touch screen 24. Therein it is provided that each touch is defined by a five-character coordinate set. It also is provided that by establishing a voltage divider circuit, the *touch* produces voltage signals detectable by the touch screen controller 18 which are representative of the average Cartesian coordinates in the x- and y-directions of the *touched area* of the screen.

15. There is **no** discussion in these lines of column 5 that more than one area of the screen is or can be being touched at the same time. It is clear that this discussion describes a process where coordinates are determined for the area being touched and nothing more. In sum, column 5 nowhere describes a technique in which coordinates are and can be determined if more than one area on the screen is being touched at the same time.

16. Reference also is made to the discussion in column 1, lines 51-63 of Ouellette, that is a part of the discussion of the Background of the invention.

17. It should first be noted that this discussion in Ouellette does not provide or state that a virtual pressure-sensitive keyboard functions the same way as a conventional keyboard. It also does not state or provide that a typist would use the same typing technique as a conventional keyboard as when using virtual pressure-sensitive keyboard.

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18. It appears that such a conclusion is being inferred because the language provides that the user would touch the touch sensitive-panel on the displayed keys in the same fashion that a typist uses a conventional typewriter and because of the parenthetical which provides capital or lower case letters depending on whether the displayed shift key is touched.

19. Whatever this discussion in Ouellette was intended to convey or describe, it was not and could not have meant that a user would touch the touch sensitive panel on two displayed keys, one being the shift key, at the same time so as to generate for example a capital letter. As indicated in the discussion above in paragraphs 4-12, at the time the application maturing into the Ouellette patent was filed, a touch sensitive panel was limited by its construction so it could be used to only determine the x-, y-coordinates of an area being touched. If more than one area were touched at the same time, the position being determined would not correspond to either of the areas being touched. See also paragraphs 7-8 above.

20. Thus, and contrary to the inference and conclusion being drawn in the Office Action, a virtual keyboard including a touch or pressure sensitive panel cannot function the same way as a conventional keyboard.

I, the undersigned Katsuya Nakagawa, declare further that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both under Section 1001 of Title 18 of the United States Code and

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that such willful false statements may jeopardize the validity of this application or any patent issuing thereon.

November 9, 2001

Katsuya Nakagawa
Katsuya Nakagawa

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